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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/512,088	11/09/2004	Naoki Sugano	261028US2XPCT	9112
22850	7590	09/12/2005		
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER HEINRICH, CHRISTOPHER P	
			ART UNIT 2837	PAPER NUMBER
DATE MAILED: 09/12/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/512,088

Applicant(s)

SUGANO ET AL.

Examiner

Christopher P. Heinrichs

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 November 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11/9/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 5, and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by USPGPUB 2003/0127289 submitted by Elgas et al.
3. With regard to claim 1, Elgas discloses a rotation driving device (fig 6) for a construction machine (industrial truck, abstract, see fig 1) comprising an electric motor (fig 6 item 3) for driving a rotational system of said construction machine (hydraulic pump drive, paragraph 4), an operating member (fig 1 item 8) for instructing an operation of said electric motor, and a controller (fig 1 item 2) for controlling said electric motor according to an operation command from said operating member, wherein said controller has an emulation model (fig 6 items 20 and 21) for simulating dynamic characteristics (characteristic map is produced) of a hydraulic rotational driving device (the motor) in real time (during operation), and a target value for control is calculated by use of said emulation model (operating point, paragraph 80) according to the operation

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command from said operating member to control said electric motor (when operating member indicates motion is necessary).

4. With regard to claim 5, Elgas discloses all aspects of the invention of claim 1 and further discloses that the device include a built in battery (fig 1 item 11).

5. With regard to claim 6, Elgas discloses all aspects of the invention of claim 1 and further discloses that the rotational system includes a rotating system (hydraulic pump, paragraphs 37 and 65) having a rotating motor (as set forth above) as a driving source.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPGPUB 2003/0127289 submitted by Elgas et al. in view of US Patent 5,953,977 to Krishna et al.

9. With regard to claims 2 and 4, Elgas discloses all aspects of the invention of claim 1 and further discloses that the emulation model has specifications of the dynamic pump (motor model, fig 6 item 20, paragraph 68) but fails to explicitly disclose that the emulation model has specifications of a hydraulic actuator and various valves. However, Krishna discloses a rotation driving device for a construction machine (fig 1) that drives a hydraulic pump (col 2 lines 62-65) and has an emulation model that includes specification of a hydraulic actuator and various valves including non-linear characteristics for the valves (a valve is an actuator) (col 2 lines 20-30). It would have been obvious to one ordinarily skilled in the art at the time of the invention to combine the system disclosed by Elgas with the system disclosed by Krishna by adding the emulation model to drive the electric motor for the hydraulic pumps (fig 1 items 16 and 17) to arrive at the invention of claim 2. The motivation to do so would have been to provide for electrical excitation and efficient control of the pump motors in the apparatus disclosed by Krishna.

10. With regard to claim 3, Elgas and Krishna disclose the invention of claim 2. Krishna further discloses an input unit (look-up table) connected to said controller so

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that each of said specifications in said emulation model (col 2 lines 27-30) is changed through said input unit (col 5 lines 57-59).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Crossley (USPGPUB 2003/0015320), Virtual Sensors to Provide Expanded Downhole Instrumentation For Electrical Submersible Pumps
- b. Bulgrin et al (US 6,682,669), Model Predictive Control Apparatus and Methods for Motion And/Or Pressure Control of Injection Molding Machines
- c. Bishop et al (USPGPUB 2003/0206805), Variable Speed Hydraulic Pump
- d. Discenzo (US 6,326,758), Integrated Diagnostics and Control Systems
- e. Discenzo (USPGPUB 2003/0061004), System and Method for Dynamic Multi-Objective Optimization of Machine Selection, Integration and Utilization
- f. Sabini et al (US 6,709,241), Apparatus and Method for Controlling a Pump System

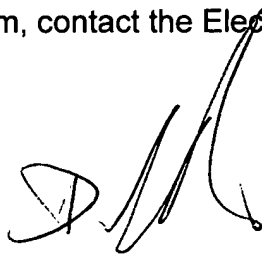
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P. Heinrichs whose telephone number is 571-272-8397. The examiner can normally be reached on Monday through Thursday, 8:30am to 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on 571-272-2107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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